

NEW SPECIES AND RECORDS IN MEGACHILE  
(Hymenoptera, Megachilidae)

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The material described and recorded here was received in large part from C. D. Michener, P. H. Timberlake and G. E. Bohart in California and R. H. Beamer in Kansas, with various scattered records from other sources.

SUBGENUS ARGYROPILE MITCHELL

MEGACHILE (ARGYROPILE) PARALLELA SMITH

*Megachile parallela* Smith, 1853, Cat. Hymen. Brit. Mus., 2:191.  
*Megachile verbesinae* Cockerell, 1908, Ann. Mag. Nat. Hist. (8)1:264. *New synonymy.*

In the revision of Nearctic *Megachile*<sup>2</sup> the suggestion was made that *verbesinae* should be considered a synonym of *parallela*, but the observation was unsupported by personal examination of the types. The specimen here recorded, which is a typical *parallela* in all respects, has been compared with the type of *verbesinae* by Timberlake and found to be identical.

Arizona: 1 ♀ Sonoita, August 9, 1940 (Timberlake, on *Verbesina*).

MEGACHILE (ARGYROPILE) NEBRASKANA MITCHELL

Colorado: 1 ♀, White Rocks, near Boulder, June 29, 1939 (Timberlake, on *Monarda*).

*Megachile* (*Argyropile*) *subparallela* Mitchell, new species

*Female.* Size: Length, 8.3 mm.; breadth of abdomen 3 mm.; anterior wing, 6 mm.

Structure: Face slightly broader above than distance from clypeal margin to anterior ocellus; eyes very slightly convergent below; clypeal margin with a small acute triangular projection separating a pair of small emarginations; mandibles 4-dentate,

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<sup>2</sup> 1937, Trans. Amer. Ent. Soc., 63:57.

the teeth acute, a conspicuous cutting edge between the third and fourth, a mere vestige of one between the second and third; basal segment of flagellum very slightly longer than pedicel, the following segments only slightly longer than broad; lateral ocelli very slightly nearer to edge of vertex than to eyes; vertex nearly flat and hind margin only slightly incurved; cheeks below subequal to eyes in width, somewhat narrower above; metatarsi somewhat shorter and narrower than their tibiae, but relatively robust; abdomen cordate in form, the sixth tergum straight in profile, with suberect hair visible toward base; apical margin of the sixth sternum thickened and slightly reflexed.

**Punctuation:** Fine and close on dorsum of thorax, more coarse on pleura, vertex, clypeus and cheeks below, fine and close on cheeks above and face above antennae; minute and densely crowded on basal segments of abdomen, becoming relatively coarse and sparse on fifth tergum, fine and crowded on the sixth.

**Color:** Black; wings subhyaline, nervures ferruginous to fuscous; tegulae yellowish-ferruginous along outer margin, darker within; spurs yellowish-ferruginous.

**Pubescence:** White and rather dense on face and clypeus, cheeks below, pleura, propodeum and base of abdomen; vertex with some inconspicuous darker hairs interspersed with pale hairs, mesonotum, scutellum, and discs of segments 2-5 with short inconspicuous dark pubescence, the sixth sparsely covered with subappressed yellowish hairs; segments 2-5 with narrow entire yellowish apical fasciae; scope creamy-white, that on sixth sternum very sparse and including a few dark hairs.

**Male:** Size: Length, 9.7 mm.; breadth of abdomen, 3.4 mm.; anterior wing, 7 mm.

**Structure:** Face about equal in breadth to distance from clypeal margin to median ocellus; eyes convergent below; clypeal margin beneath beard smooth and shining, slightly incurved; mandibles 3-dentate, the inner tooth robust and triangular, the basal inferior projection slender; basal segment of flagellum longer than pedicel, the following segments twice as long as broad, lateral ocelli subequally distant from eyes and edge of vertex; vertex nearly flat, hind margin nearly straight; cheeks subequal to eyes in width, not excavated below; front coxal spines short, the tips triangularly acute; front tarsi long, slender and unmodified; front tibiae and femora unmodified; mid and hind legs slender, the metatarsi narrow and quite short, the mid tarsal segments not at all produced apically; segments of abdomen quite deeply grooved basally, the apical margins deeply and abruptly depressed except on the basal segments medially, the disc of the fifth tergum carinate apically and slightly overhanging the depressed apical margin; carina of sixth tergum semi-circular in form, with a deep rounded median emargination, apical margin of the tergum with robust subtruncate carinate median teeth which are much nearer the small triangular lateral angles than to each other; seventh tergum obscure, rounded

apically; fourth sternum exposed; presternite of fifth sternum almost linear medially, with a patch of pubescence apically on each side, the medasternite beset with setae, the tips of which are broadly dilated and flexed, a fringe of simple setae around basal margin, the poststernal strip straight and simple; medasternal areas of sixth sternum contiguous medially at base, closely covered with short robust setae with strongly dilated and flexed tips, the poststernal lobe very broadly semi-circular in outline; cardo of genital armature quite narrow, stipites entirely bare, slightly dilated and flattened apically and slightly exceeded in length by the simple sagittae, volsellae quite robust, triangularly pointed apically.

Puncturation: Fine and rather sparse on dorsum of thorax, the surface dull and granular; somewhat more coarse and close on pleura and propodeum, but obscured by dense pubescence; moderately coarse and rather sparse on vertex medially, becoming fine and close on cheeks below; rather fine and close on basal segments of abdomen, becoming more coarse and more widely separated to the fifth tergum, close and substriate on the sixth above carina.

Color: Black; antennae beneath more brownish; apices of front and mid tibiae ferruginous; tegulae yellowish-ferruginous on outer portion; wings subhyaline, nervures piceous to ferruginous; spurs yellowish.

Pubescence: Pale throughout; long and dense on face, clypeus, cheeks, pleura, propodeum, and base of abdomen, front tarsi with a rather thin white fringe; segments 2-4 of abdomen with entire white apical fasciae, the fifth not fasciate but with some basal white tomentum, the sixth with dense white tomentum covering most of disc above.

*Holotype* female DOUGLAS, ARIZONA, August 16, 1936 (W. W. Jones), *allotype* male, topotypical (W. W. Jones), [both Timberlake].

The male of *subparallela* differs from that of *parallela* in the following respects: The definitely 3-dentate mandibles (either obscurely or distinctly 4-dentate in *parallela*); the absence of a median tubercle on the clypeal margin; the median apical teeth of the sixth tergum are truncate and carinate (usually slender and acute in *parallela* but subject to considerable variation); the seventh tergum lacking the slight median indentation found in *parallela*; and the lack of a distinct apical fascia on the fifth tergum. The range of variation in *parallela* is considerable, but this form seems to lie outside that range.

The female of *subparallela* runs to *sabinensis* in the key recently published.<sup>3</sup> However, *sabinensis* is much larger and the

<sup>3</sup> 1943, Pan-Pac. Ent., 19:12.

clypeal margin is relatively straight, the median tubercle being minute and not delimited by the emarginations found in *subparallela*. Moreover, in *sabinensis* the scopa on the sixth sternum is entirely black, this being almost entirely pale in *subparallela*, and the sixth tergum bears conspicuous white tomentum medially, with darker erect basal hairs and appressed fuscous tomentum apically. In *subparallela* the disc of this segment is quite uniformly covered with rather sparse suberect yellowish pubescence, with neither definitely black nor white hairs in evidence.

#### SUBGENUS DELOMEGACHILE VIERECK

##### MEGACHILE (DELOMEGACHILE) FRIGIDA SMITH

Before her death, Dr. Grace Sandhouse called my attention to the fact that I was in error in my use of the name *vidua* instead of *frigida* for this species. Smith proposed both names, *vidua* for the female on p. 192 and *frigida* for the male on p. 193 (Cat. Hym. Brit. Mus. 1, 1853). As the name *vidua* has page precedence, it was thought proper to use. However, Cresson in his Synopsis of Hymenoptera, p. 303, 1887, made *vidua* a synonym of *frigida*, in spite of the page precedence of *vidua*, and according to article 28 of the International Rules of Zoological Nomenclature, "If the names are of the same date, that selected by the first reviser shall stand."

#### SUBGENUS XEROMEGACHILE MITCHELL

Records of four species, namely *deflexa*, *manifesta*, *nevadensis*, and *wheeleri*, are omitted in the following list, since they add little to the present knowledge of their distribution.

##### MEGACHILE (XEROMEGACHILE) ALATA MITCHELL

CALIFORNIA: 1 ♂, Mt. San Jacinto, Riverside County, May 28, 1939. 1 ♂, Argus Mts., Inyo County, June 4, 1939. 1 ♂, N. Inyo Mts., Inyo County, June 7, 1939 (all R. M. Bohart). 2 ♂, Taquitz Canyon, Riverside County, April 16, 1938 (R. M. and G. E. Bohart). 2 ♂, Independence, Inyo County, June 1, 1937 (W. C. Reeves). 1 ♂ Palm Canyon, April 9, 1938 (E. P. Van Duzee).

##### MEGACHILE (XEROMEGACHILE) BRADLEYI MITCHELL

UTAH: 1 ♀, Orr's Ranch, September 11, 1935 (G. F. Knowlton).



## MEGACHILE (XEROMEGACHILE) BRIMLEYI MITCHELL

FLORIDA: 1 ♂, Cedar Keys, August 10, 1939 (R. H. Beamer). NORTH CAROLINA: 3 ♂, 10 miles south of Lillington, July 7, 1938 (Mitchell and Hill). 1 ♀, Carolina Beach, July 25, 1941 (T. B. Mitchell).

## MEGACHILE (XEROMEGACHILE) CASADAE COCKERELL

COLORADO: 1 ♀, 8 miles south of Grand Mesa, July 12, 1938, scrub oak zone (U. Lanham). 1 ♀, Mishawauka, July 11, 1937 (H. T. Peters). OKLAHOMA: 1 ♀, Hinton, June 5, 1939 (Kaiser-Nailon).

## MEGACHILE (XEROMEGACHILE) COLORADENSIS MITCHELL

COLORADO: 1 ♀, Buffalo, August (E. S. Tucker).

## MEGACHILE (XEROMEGACHILE) DAKOTENSIS MITCHELL

IOWA: 12 ♀, County 3, July 10-14, 1936 (Anderson, Barry, Jacques and Millspaugh). TEXAS: 1 ♀, Romney, June 30, 1936 (R. H. Beamer).

## MEGACHILE (XEROMEGACHILE) FUCATA MITCHELL

CALIFORNIA: 1 ♂, Essex, May 29, 1937 (M. A. Cazier). 3 ♂, Inyo Mts., Inyo County, May 23, 1937 (W. C. Reeves). 1 ♂, Mazourka Canyon, Inyo Mts., 6,000 feet, June 1, 1937 (Michener, on *Encelia farinosa*). 1 ♂, Argus Mts., Inyo County, May 22, 1937. 1 ♂, Inyo Mts., June 1, 1937 (E. C. Van Dyke).

## MEGACHILE (XEROMEGACHILE) HISTRATA MITCHELL

ARIZONA: 1 ♀, Tucson, April 24, 1937 (W. Benedict). CALIFORNIA: 1 ♀, Mohave Desert, 1932. 1 ♀, N. Inyo Mts., Inyo County, June 7, 1939 (R. M. Bohart).

The specimen from N. Inyo Mts. bears the same data as a male of *Xeromegachile alata* (see page 135) suggesting the probability that the two are the same. If this proves to be the fact, *histrata* will become a synonym of *alata* since the latter has page precedence.<sup>4</sup>

<sup>4</sup> 1934, Trans. Amer. Ent. Soc., 59:324, 334.

## MEGACHILE (XEROMEGACHILE) HOOKERI COCKERELL

COLORADO: 1 ♀, (no data) (T. Pergande). UTAH: 3 ♀, Desert, September 9, 1938 (L. L. Hanson). 3 ♀, Valley Mts., 7,000 feet, September.

## MEGACHILE (XEROMEGACHILE) IMPARTITA MITCHELL

CALIFORNIA: 1 ♀, Westgard Pass, Inyo County, May 27, 1937 (R. M. and G. E. Bohart). 1 ♀, Lone Pine, Inyo County, May 23, 1937. 1 ♀, Inyo Mts., June 1, 1937 (both E. C. Van Dyke).

## MEGACHILE (XEROMEGACHILE) INTEGRAL CRESSON

FLORIDA: 5 ♂, 3 ♀, Suwannee Springs, August 2 and 3, 1939 (Beamer, Hardy and Wegenek). 1 ♀, Suwannee Springs, July 29, 1930 (P. W. Oman). 2 ♂, Branford, July 31, 1930. 1 ♂, Lacoochee, August 18, 1930 (both J. Nottingham). 1 ♀, Sanford, August 8, 1939 (R. H. Beamer).

## MEGACHILE (XEROMEGACHILE) LEGALIS CRESSON

*Megachile legalis* Cresson, 1879, Trans. Amer. Ent. Soc., 7:209. *Megachile (Xeromegachile) couleeana* Mitchell, 1938, Pan-Pac. Ent., 14:171. *New Synonymy*.

The true identity of the female described under the name *couleeana* has become evident by the collection by Timberlake of a series of 2 males and 6 females at the same time and on the same flower, in the absence of any other closely related species. Only 3 specimens of this series have been examined personally, the record of which, together with others, follows.

ARIZONA: 1 ♂, Flagstaff, June 11, 1909 (F. C. Pratt, on *Iris*). CALIFORNIA: 1 ♂, Independence, Inyo County, June 11, 1937 (W. C. Reeves). NEVADA: 1 ♂, 2 ♀, Kyle Canyon, Charleston Mts., 5,000 feet, June 3 and 4, 1941 (Timberlake, on *Cirsium*). OREGON: 1 ♀, Culver, July 2, 1935 (R. H. Beamer).

## MEGACHILE (XEROMEGACHILE?) MAURATA MITCHELL

For a note concerning the status of this species, see *M. (Dero-tropis) subanograe*, page 139.

CALIFORNIA: 3 ♂, Panamint Mts., 5 miles north of Wildrose Canyon, 5,000 feet, Inyo County, May 27, 1937 (Michener, on *Sphaeralcea ambigua*). 1 ♂, Panamint Mts., May 30, 1937 (E. C. Van Dyke).

## MEGACHILE (XEROMEGACHILE) MOJAVENSIS MITCHELL

CALIFORNIA: 1 ♀, Lone Pine, Inyo County, May 19, 1937 (W. C. Reeves). 1 ♀, Lone Pine, May 23, 1937 (E. C. Van Dyke).

## MEGACHILE (XEROMEGACHILE) MUCOROSA COCKERELL

COLORADO: 2 ♂, (Snow). KANSAS: 1 ♂, Clark County, (F. H. Snow). TEXAS: 1 ♂, Romero, June 22, 1940 (E. E. Kenaga).

## MEGACHILE (XEROMEGACHILE) OSLARI MITCHELL

COLORADO: 2 ♀, Durango, 6,300 feet, June 3 and 11, 1936 (B. Rotger).

## MEGACHILE (XEROMEGACHILE) PALMENSIS MITCHELL

CALIFORNIA: 2 ♂, Taquitz Canyon, Riverside County, April 16, 1938. 5 ♂, 4 ♀, Palm Canyon, Riverside County, April 15, 1938, on *Sphaeralcea ambigua* and *Encelia farinosa* (both R. M. and G. E. Bohart).

## MEGACHILE (XEROMEGACHILE) SOLEDADENSIS COCKERELL

ARIZONA: 1 ♂, Picacho Pass, August 7, 1940. 1 ♂, Pepper Sauce Canyon, Santa Catalina Mts., August 16, 1940 (both E. S. Ross). 1 ♂, Sonoita, August 9, 1940 (Timberlake, on *Verbesina enceloides*). TEXAS: 1 ♂, El Paso, August 21, 1908 (F. C. Pratt).

## MEGACHILE (XEROMEGACHILE) SUBNIGRA CRESSON

CALIFORNIA: 5 ♂, Leavitt Meadow, Walker River, Mono County, June 25, 1937 (E. C. Van Dyke). 1 ♂, Siskiyou County, June 2, 1911. 7 ♂, 3 ♀, W. Walker River, Mono County, 7,200 feet, June 25, 1937 (Michener, on *Aster* and *Senecio*). IDAHO: 1 ♀, Craters of Moon, June 20, 1938 (E. C. Van Dyke). NEVADA: 1 ♂, 25 miles northwest of Geriach, Washoe County, May 29, 1939 (Ting, Cazier, Downes and Aitken). WASHINGTON: 1 ♀, Cliffdell, July 7, 1935 (E. I. Beamer). WYOMING: 1 ♂, Grand Teton National Park, July, 1937 (R. M. and G. E. Bohart).

MEGACHILE (XEROMEGACHILE) SUBNIGRA VAR. ANGELICA  
MITCHELL

CALIFORNIA: 1 ♂, Westgard Pass, Inyo County, June 3, 1937 (N. W. Frazier). 1 ♂, Westgard Pass, June 15, 1937. 2 ♂, Mazourka Canyon, Inyo Mts., 6,000 feet, June 1, 1937 (both Mich-

ener, on *Encelia farinosa*). 1 ♂, Feather River, Butte County, June 14, 1940 (Cazier and Aitken). 2 ♂, Westgard Pass Plateau, June 3, 1937. 6 ♂, Lone Pine, Inyo County, May 23-24, 1937 (both E. C. Van Dyke). 1 ♂, Mt. San Jacinto, Riverside County, May 28, 1939 (both R. M. Bohart). OREGON: 1 ♂, Quartz Creek, 20 miles east of Ely, Lake County, 5,500 feet, July 8, 1937. 1 ♂, Cherry Creek, west side Klamath Lake, 4,175 feet, June 26, 1937 (both Bolinger and Jewett). IDAHO: 1 ♀, (*blaisdelli*), Craters of Moon, June 20, 1938 (E. C. Van Dyke).

#### SUBGENUS DEROTROPIS MITCHELL

Four species of *Derotropis* are known in both sexes, *gravita* (♀ *astata*), *pascoensis* (♀ *gabrielensis*), *xerophila* and *astragali*. Four other species are known only in one sex; the male only of *alamosana* and the females only of *anograe*, *subanograe*\* and *laurita*. It now seems probable that *alamosana* is the male of *anograe*, judging from the range, these being the easternmost in distribution, and from the similarity of the two forms to the respective sexes of *gravita* and *pascoensis*. This relationship, however, remains to be demonstrated. Some evidence concerning the identity of the male of *subanograe* can now be presented, but that of *laurita* still has to be discovered.

#### MEGACHILE (DEROTROPIS) SUBANOGRAE MITCHELL

A series of five females of this species received from C. D. Michener was accompanied by three males of *M.* (*Xeromegachile*) *maurata* Mitchell, the two series bearing identical data as to locality, date and flower record. This suggests their common identity, and if proven correct, results in obscuring the distinctions between the males of *Xeromegachile* and *Derotropis*. They are quite similar in size and in general appearance, and to that degree the association seems a reasonable one.

An additional question concerns the range of variation of the females of this species. A number of specimens from Arizona, California, Nevada, and Texas have been received, all bearing strong resemblances to typical *subanograe*, but with enough differences to indicate the possibility, at least, that they represent different species. Were these accompanied by males, a more

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\* The specimen recorded on p. 174, Pan-Pacific Ent. 14, 1938, evidently is a female, not a male as indicated.



positive opinion in the matter would be warranted. Since the males are not known, two of these variants are described below, and the test of their validity is left to the future. Records of the more typical *subanograe* follow.

CALIFORNIA: 1 ♀, Panamint Mts., Inyo County, May 29, 1937 (N. W. Frazier). 5 ♀, 5 miles north of Wildrose Canyon, Panamint Mts., Inyo County, 5,000 feet, May 27, 1937 (C. D. Michener, on *Sphaeralcea ambigua*). UTAH: 2 ♀, 12 miles east of Jensen, June 23, 1939 (Timberlake, on *Sphaeralcea*). NEVADA: 1 ♀, Lee Canyon, Mt. Charleston, Clark County, May 24, 1940 (Reeves, Cazier and Ting).

**Megachile (Derotropis) melanderi Mitchell, new species**

*Female*. Size: Length, 9 mm.; breadth of abdomen, 3.5 mm.; anterior wing, 7 mm.

Structure: Length and breadth of face equal; eyes nearly parallel; apical margin of clypeus nearly straight and entire; mid tooth of mandible about twice as distant from inner angle as from apex of mandible; second joint of labial palpus not greatly exceeding the first in length (ratio of about 10-7); second segment of flagellum subequal to pedicel, the first considerably longer, middle segments about as long as broad, apical one longer; lateral ocelli subequally distant from eyes and edge of vertex; vertex nearly flat, its posterior margin only slightly curved; cheeks subequal to eyes in width; mid and hind metatarsi nearly as broad as their tibiae and about four-fifths as long; sixth tergum straight in profile, with erect hairs evident.

Puncturation: Fine and close on middle of face, supraclypeal area, upper margin of clypeus, on either side of middle of vertex, on scutellum except in center and on upper portions of pleura; more coarse and irregular on clypeus medially, fading out toward the margin; shallow and obscure on cheeks, becoming sparse below; relatively sparse above ocelli; deep and distinctly separated on mesonotum, rather widely so in center, as also on scutellum; more coarse on pleura below; minute and obscure but quite close on abdomen basally, becoming increasingly sparse to the fifth tergum, more close, deep and coarse on the sixth.

Color: Black; flagellum more fuscous; tegulae ferruginous with fuscous blotches; wings subhyaline, somewhat clouded apically, nervures fuscous to blackish; front and middle tibial spurs yellowish, hind spurs more fuscous.

Pubescence: Entirely white on head, thorax, legs and segments 1 and 2 of abdomen; black and erect on discs of segments 3-5, the sixth with scattered erect black hairs and subappressed silvery tomentum; segments 1-5 with dense, entire and conspicuous white apical fasciae; scopa white, black on fifth and sixth sterna.

*Holotype* female: MARFA, TEXAS, April 28, 1942 (A. L. Melander) [Timberlake].

*Megachile* (*Derotropis*) *yumensis* Mitchell, new species

*Female*. Size: Length, 9.3 mm.; breadth of abdomen, 3.5 mm.; anterior wing, 6.5 mm.

Structure: Breadth of face about equal to distance from clypeal margin to median ocellus; eyes slightly convergent below; clypeal margin broadly impunctate, straight and simple; mandibles 3-dentate, distance from apex of inner tooth to that of middle tooth not quite twice that from the middle to the apical tooth, a prominent cutting edge between the second and inner teeth; second joint of labial palpus not greatly exceeding the first in length (ratio of about 11-8); basal segment of flagellum longer than pedicel or the second segment, the median segments only about as long as broad; lateral ocelli subequally distant from eyes and edge of vertex; vertex slightly rounded; its hind margin very slightly incurved; cheeks subequal to eyes in width; all the metatarsi slightly narrower and considerably shorter than their respective tibiae; abdomen cordate in form; sixth tergum straight in profile, with abundant erect hair visible.

Punctuation: Rather fine on head, irregular and rather deep on clypeus beneath the dense pubescence, close on face, rather close on vertex medially, more sparse laterally, irregular and shallow on shining cheeks; slightly more coarse and deep on thorax, well separated in center of mesonotum and scutellum, close on pleura, but becoming fine and sparse anteriorly; minute on abdomen, close and indistinct toward base, increasingly sparse to the fifth tergum, quite close on the sixth.

Color: Black, antennae deep ferruginous beneath; apices of front and mid tibiae ferruginous; tegulae piceous; wings hyaline, slightly clouded apically, the nervures fuscous; front and middle spurs yellowish, hind spurs more fuscous.

Pubescence: Entirely white on head, thorax and segments 1 and 2 of abdomen, dense on face, clypeus, cheeks below and pleura; discs of third to fifth terga with intermixed dark and light hairs, that on the sixth entirely white, rather sparse; segments 1-5 with broad dense entire white apical fasciae; scopa white, black on sixth sternum.

*Holotype* female: YUMA, ARIZONA, March 30, 1940 (R. C. Dickson) [Timberlake]. *Paratype*, 1♀, topotypical.

In the paratype a slight amount of variation is to be noted, in that the tegulae and hind spurs are somewhat paler in color, the short pubescence on the discs of the abdominal terga is almost entirely pale, and there is a slight amount of black in the scopa along the hind margin of the fifth sternum.

## MEGACHILE (DEROTROPIS) ANOGRAE COCKERELL

CALIFORNIA: 1 ♀, Santa Paula, June 15, 1927. COLORADO: 1 ♀, Mishawauka, July 11, 1937 (H. T. Peters). Also recorded from Inspiration Point, Denver, July 2, 1933. MONTANA: 1 ♀, Jefferson County, July 24, 1924.

## MEGACHILE (DEROTROPIS) GRAVITA MITCHELL

CALIFORNIA: 1 ♂, Jamesburg, Hastings Nat. Hist. Reserve, Santa Lucia Mts., Monterey County, 1,900-2,700 feet, May 10, 1938 (Michener). 1 ♀, Cal. Hot Springs, Tulare County, June 2, 1939 (E. C. Van Dyke). 1 ♂, Cuyamaca Lake, July 6, 1929 (R. H. Beamer). OREGON: 1 ♂, Grave Creek, at Reuben Creek, 20 miles north of Grants Pass, June 16, 1937 (Bolinger and Jewett). 1 ♀, Prospect, June 20, 1924 (C. L. Fox).

## MEGACHILE (DEROTROPIS) PASCOENSIS MITCHELL

CALIFORNIA: 2 ♂, Coalings, May 14, 1938 (M. Cazier). 1 ♂, 1 ♀, Antioch, May 8 and 11, 1937. 1 ♀, Mt. Diablo, May 12, 1937 (both R. M. and G. E. Bohart). 1 ♀, Briceburg, Mariposa County, June 3, 1938 (R. M. Bohart). 2 ♂, 2 ♀, Jamesburg, Hastings Nat. Hist. Reserve, Santa Lucia Mts., Monterey County, 1,900-2,700 feet, May 21, June 2 and 20, 1938, on *Convolvulus villosus* and *Trifolium* (C. D. Michener). 1 ♀, Cal. Hot Springs, Tulare County, June 2, 1939 (E. C. Van Dyke). 1 ♀, San Luis Obispo, June 17, 1938 (I. McCracken). 1 ♂, Antioch sand dunes, June 4, 1942 (H. A. Scullen). IDAHO: 1 ♂, St. Joe River, July 12, 1927 (M. C. Lane).

## MEGACHILE (DEROTROPIS) ALAMOSANA MITCHELL

OREGON: 1 ♂, Boardman, Morrow County, June 4, 1943 (G. R. Ferguson).

## KEY TO SPECIES OF DEROTROPIS

## FEMALES

1. Scopa entirely black.....*laurita* Mitch. (and varieties)
- Scopa pale on segments 1-4.....2
2. Mesonotum dull, tessellate, with very fine and sparse punctures  
.....*xerophila* Ckll.
- Mesonotum more coarsely and closely punctate, the surface between the punctures shining.....3
3. Mesonotum and scutellum uniformly densely and rather finely punctate .....*gravita* Mitch.

- Punctures in center of mesonotum separated at least by a puncture width .....4
- 4. Vertex and scutellum dull, with the punctures fine and very close, no shining spaces evident.....*pascoensis* Mitch.
- Vertex and scutellum more shining, with definite spaces evident between the punctures.....5
- 5. Scopa on the fifth sternum entirely white, largely dark on the sixth; distance from middle tooth of mandible to the inner tooth not quite twice that from the middle tooth to the apex .....*yumensis* Mitch.
- Scopa entirely black on fifth and sixth sterna.....6
- 6. Pubescence of discs of segments 1-4 of abdomen entirely or largely pale, with very inconspicuous darker hairs or none; the sixth with erect black hairs and subappressed inconspicuous silvery tomentum.....*subanograe* Mitch.
- Third and usually the second terga with conspicuous black pubescence .....7
- 7. Sixth tergum with erect black hairs, otherwise bare, with no evidence of pale tomentum; distance from middle to inner teeth of mandible fully three times that from middle tooth to apex .....*anograe* Ckl.
- Sixth tergum with at least some silvery tomentum; distance from middle to inner teeth of mandible not so extreme.....8
- 8. Sixth tergum uniformly covered with fine suberect silvery pubescence, with no dark hairs in evidence, the punctures uniformly fine and close even at base; hind metatarsi very narrow, hardly more than half as wide as their tibiae....*astragali* Mitch.
- Sixth tergum with conspicuous erect black hairs; hind metatarsi nearly equal to their tibiae in width.....*melanderi* Mitch.

#### MALES

- 1. Front tarsi black, entirely simple, neither dilated nor excavated .....*astragali*
- Front tarsi yellowish or ferruginous, dilated and excavated....2
- 2. Mesosternum with a pair of acute tubercles anterior to the mid coxae .....*gravita*
- Mesosternum not spinose .....3
- 3. Mesonotum dull and tessellate, almost impunctate medially; seventh tergum simple.....*xerophila*
- Mesonotum more shining, distinctly punctate medially; seventh tergum with a slender apical spine.....4
- 4. Fifth tergum polished, the punctures sparse and minute, its apical margin not fasciate.....*alamosana*
- Fifth tergum more closely and coarsely punctate, and with a distinct white apical fascia.....5
- 5. Apical margin of clypeus with a broad and deep median emargination .....*pascoensis*
- Apical margin of clypeus entire.....*maurata* (*subanograe*?)